



OIPÉ

RAW SEQUENCE LISTING

DATE: 01/26/2002

PATENT APPLICATION: US/09/927,267

TIME: 13:50:17

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

p.5
ENTERED

```

3 <110> APPLICANT: Creech, Christopher D.
4   Jegla, Timothy J.
5   ICAgen, Inc.
7 <120> TITLE OF INVENTION: CNG2B: A Novel Human Cyclic Nucleotide-Gated Ion
8   Channel
10 <130> FILE REFERENCE: 018512-006510US
12 <140> CURRENT APPLICATION NUMBER: US 09/927,267
13 <141> CURRENT FILING DATE: 2001-08-10
15 <150> PRIOR APPLICATION NUMBER: US 60/226,253
16 <151> PRIOR FILING DATE: 2000-08-17
18 <160> NUMBER OF SEQ ID NOS: 16
20 <170> SOFTWARE: PatentIn Ver. 2.1
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 575
24 <212> TYPE: PRT
25 <213> ORGANISM: Homo sapiens
27 <220> FEATURE:
28 <223> OTHER INFORMATION: cyclic nucleotide-gated cation channel 2B (CNG2B)
30 <400> SEQUENCE: 1
31 Met Ser Gln Asp Thr Lys Val Lys Thr Thr Glu Ser Ser Pro Pro Ala
32   1           5           10           15
33 Pro Ser Lys Ala Arg Lys Leu Leu Pro Val Leu Asp Pro Ser Gly Asp
34           20           25           30
35 Tyr Tyr Tyr Trp Trp Leu Asn Thr Met Val Phe Pro Val Met Tyr Asn
36           35           40           45
37 Leu Ile Ile Leu Val Cys Arg Ala Cys Phe Pro Asp Leu Gln His Gly
38           50           55           60
39 Tyr Leu Val Ala Trp Leu Val Leu Asp Tyr Thr Ser Asp Leu Leu Tyr
40   65           70           75           80
41 Leu Leu Asp Met Val Val Arg Phe His Thr Gly Phe Leu Glu Gln Gly
42           85           90           95
43 Ile Leu Val Val Asp Lys Gly Arg Ile Ser Ser Arg Tyr Val Arg Thr
44           100          105          110
45 Trp Ser Phe Phe Leu Asp Leu Ala Ser Leu Met Pro Thr Asp Val Val
46           115          120          125
47 Tyr Val Arg Leu Gly Pro His Thr Pro Thr Leu Arg Leu Asn Arg Phe
48           130          135          140
49 Leu Arg Ala Pro Arg Leu Phe Glu Ala Phe Asp Arg Thr Glu Thr Arg
50   145          150          155          160
51 Thr Ala Tyr Pro Asn Ala Phe Arg Ile Ala Lys Leu Met Leu Tyr Ile
52           165          170          175
53 Phe Val Val Ile His Trp Asn Ser Cys Leu Tyr Phe Ala Leu Ser Arg
54           180          185          190

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/927,267

DATE: 01/26/2002

TIME: 13:50:17

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

```

55 Tyr Leu Gly Phe Gly Arg Asp Ala Trp Val Tyr Pro Asp Pro Ala Gln
56      195      200      205
57 Pro Gly Phe Glu Arg Leu Arg Arg Gln Tyr Leu Tyr Ser Phe Tyr Phe
58      210      215      220
59 Ser Thr Leu Ile Leu Thr Thr Val Gly Asp Thr Pro Pro Pro Ala Arg
60 225      230      235      240
61 Glu Glu Glu Tyr Leu Phe Met Val Gly Asp Phe Leu Leu Ala Val Met
62      245      250      255
63 Gly Phe Ala Thr Ile Met Gly Ser Met Ser Ser Val Ile Tyr Asn Met
64      260      265      270
65 Asn Thr Ala Asp Ala Ala Phe Tyr Pro Asp His Ala Leu Val Lys Lys
66      275      280      285
67 Tyr Met Lys Leu Gln His Val Asn Arg Lys Leu Glu Arg Arg Val Ile
68      290      295      300
69 Asp Trp Tyr Gln His Leu Gln Ile Asn Lys Lys Met Thr Asn Glu Val
70 305      310      315      320
71 Ala Ile Leu Gln His Leu Pro Glu Arg Leu Arg Ala Glu Val Ala Val
72      325      330      335
73 Ser Val His Leu Ser Thr Leu Ser Arg Val Gln Ile Phe Gln Asn Cys
74      340      345      350
75 Glu Ala Ser Leu Leu Glu Glu Leu Val Leu Lys Leu Gln Pro Gln Thr
76      355      360      365
77 Tyr Ser Pro Gly Glu Tyr Val Cys Arg Lys Gly Asp Ile Gly Gln Glu
78      370      375      380
79 Met Tyr Ile Ile Arg Glu Gly Gln Leu Ala Val Val Ala Asp Asp Gly
80 385      390      395      400
81 Ile Thr Gln Tyr Ala Val Leu Gly Ala Gly Leu Tyr Phe Gly Glu Ile
82      405      410      415
83 Ser Ile Ile Asn Ile Lys Gly Asn Met Ser Gly Asn Arg Arg Thr Ala
84      420      425      430
85 Asn Ile Lys Ser Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Glu
86      435      440      445
87 Asp Leu Arg Glu Val Leu Ser Glu Tyr Pro Gln Ala Gln Thr Ile Met
88      450      455      460
89 Glu Glu Lys Gly Arg Glu Ile Leu Leu Lys Met Asn Lys Leu Asp Val
90 465      470      475      480
91 Asn Ala Glu Ala Ala Glu Ile Ala Leu Gln Glu Ala Thr Glu Ser Arg
92      485      490      495
93 Leu Arg Gly Leu Asp Gln Gln Leu Asp Asp Leu Gln Thr Lys Phe Ala
94      500      505      510
95 Arg Leu Leu Ala Glu Leu Glu Ser Ser Ala Leu Lys Ile Ala Tyr Arg
96      515      520      525
97 Ile Glu Arg Leu Glu Trp Gln Thr Arg Glu Trp Pro Met Pro Glu Asp
98      530      535      540
99 Leu Ala Glu Ala Asp Asp Glu Gly Glu Pro Glu Glu Gly Thr Ser Lys
100 545      550      555      560
101 Asp Glu Glu Gly Arg Ala Ser Gln Glu Gly Pro Pro Gly Pro Glu
102      565      570      575
105 <210> SEQ ID NO: 2

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/927,267

DATE: 01/26/2002

TIME: 13:50:17

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

```

106 <211> LENGTH: 2308
107 <212> TYPE: DNA
108 <213> ORGANISM: Homo sapiens
110 <220> FEATURE:
111 <223> OTHER INFORMATION: cyclic nucleotide-gated cation channel 2B (CNG2B)
112     complete nucleotide sequence derived from assembly
113     of PCR fragments
115 <220> FEATURE:
116 <221> NAME/KEY: CDS
117 <222> LOCATION: (333)..(2060)
118 <223> OTHER INFORMATION: CNG2B
120 <400> SEQUENCE: 2
121 agaggggagg aggaaaacag agacaagact caggcttccc tctgaggcat gcacccccac 60
122 cttctccagg gatctcatta gaggtgttta gctgggcagg tgtaagccca ggccctggga 120
123 gacagggcag agtgctagag ctagactgtc tccacccctt cagtagcgct agctctgggt 180
124 gtgttgctaa gagccccaaa gacaaagaag tcacagcaga agcccaacag cagcctcctt 240
125 cagacagtca ggcactagtg cccaactcca gaagtcacct acaggcagag aggggtgtgga 300
126 catctcacac cccagcacca gaccacagaa ccatgagcca ggacaccaa gtgaagacaa 360
127 cagagtcagg tccccagccc ccattccaagg ccaggaagtt gctgcctgtc ctggacccat 420
128 ctggggatta ctactactgg tggctgaaca caatggtctt ccagtcattg tataacctca 480
129 tcattcctcg gtgcagagcc tgcttccccg acttgacgca cggttatctg gtggcctggt 540
130 tgggtgctga ctacacgagt gacctgctat acctactaga catggtggtg cgcttccaca 600
131 caggattctt ggaacagggc atcctggttg tggacaaggg taggatctcg agtcgctacg 660
132 ttgcacctg gagttttctt ttggacctgg ctccctgat gccacagat gtggtctacg 720
133 tgcggctggg cccgcacaca cccacctga ggctgaaccg ctttctccgc gcgccccgcc 780
134 tcttcgaggg cttcgaccgc acagagaccc gcacagctta cccaaatgcc tttcgcattg 840
135 ccaagctgat gctttacatt tttgtcgtca tccattggaa cagctgccta tactttgccc 900
136 tatcccggtg cctgggcttc gggcgtgacg catgggtgta cccggacccc gcgcagcctg 960
137 gctttgagcg cctgcggcgc cagtacctct atagctttta cttctccacg ctgatactga 1020
138 ctacagtggg cgataaccgc ccgccagcca gggaagaaga gtacctcttc atggtgggag 1080
139 acttctctgt ggccgtcatg ggtttcgcca ccatcatggg tagcatgagc tctgtcatct 1140
140 acaacatgaa cactgcagat gcggctttct acccagatca tgcactggtg aagaagtaca 1200
141 tgaagctgca gcacgtcaac cgcaagctgg agcggcgagt tattgactgg tatcagcacc 1260
142 tgcagatcaa caagaagatg accaagcagg tagccatctt acagcacttg cctgagcggc 1320
143 tgcgggcaga agtggtctgt tctgtgcacc tgtccactct gagccgggtg cagatcttct 1380
144 agaactgtga ggccagcctg ctggaggagc tgggtgctgaa gctgcagccc cagacctact 1440
145 caccaggtga atatgtatgc cgcaaaggag acattggcca agagatgtac atcatccgag 1500
146 aggggtcaact ggccgtggtg gcagatgatg gtatcacaca gtatgctgtg ctcggtgcag 1560
147 ggctctactt tggggagatc agcatcatca acatcaaagg gaacatgtct gggaaccgcc 1620
148 gcacagccaa catcaagagc ctaggttatt cagacctatt ctgcctgagc aaggaggacc 1680
149 tgcgggaggt gctgagcgag tatccacaag cacagaccat catggaggag aaaggacgtg 1740
150 agatcctgct gaaaatgaac aagttggacg tgaatgctga ggcagctgag atcgccctgc 1800
151 aggaggccac agagtcccggt ctacgaggcc tagaccagca gctggatgat ctacagacca 1860
152 agtttgctcg cctcctggct gagctggagt ccagcgcact taagattgct taccgcattg 1920
153 aacggctgga gtggcagact cgagagtggc caatgcccgga ggacctggct gaggctgatg 1980
154 acgaggggtg gcctgaggag ggaacttcca aagatgaaga gggcagggcc agccaggagg 2040
155 gacccccagg tccagagtga ccccatcccc atccccagga tccccacctc ctagtgaatc 2100
156 cagagttgta gtaaagccta actgctgcaa ctctgtcatc ctgtctgcca gatcacagac 2160
157 acaggagcga attggtctgt agatgccccg ctagagatat aggagtttaa cgcacattca 2220

```

RAW SEQUENCE LISTING

DATE: 01/26/2002

PATENT APPLICATION: US/09/927,267

TIME: 13:50:17

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

```

158 gcccccaactt accagtacac acacacacac acacacacac acatttgctc atagacctgt 2280
159 tggccccaag actgtgcatt ccatctaa 2308
162 <210> SEQ ID NO: 3
163 <211> LENGTH: 1728
164 <212> TYPE: DNA
165 <213> ORGANISM: Homo sapiens
167 <220> FEATURE:
168 <223> OTHER INFORMATION: cyclic nucleotide-gated cation channel 2B (CNG2B)
169 coding sequence
171 <220> FEATURE:
172 <221> NAME/KEY: CDS
173 <222> LOCATION: (1)..(1728)
174 <223> OTHER INFORMATION: CNG2B
176 <400> SEQUENCE: 3
177 atgagccagg acaccaagt gaagacaaca gaggccagtc cccagcccc atccaaggcc 60
178 aggaagttgc tgccgtgctt ggacccatct ggggattact actactggtg gctgaacaca 120
179 atggtcttcc cagtcattga taacctcatt atcctcgtgt gcagagcctg ctcccccgac 180
180 ttgcagcacg gttatctggt ggcctgggtg gtgctggact acacgagtga cctgctatac 240
181 ctactagaca tgggtggtgcg ctccacaca ggattcttgg aacagggcat cctggtggtg 300
182 gacaagggtg ggatctcgag tcgtacgtt cgcacctgga gttcttctt ggacctggct 360
183 tccctgatgc ccacagatgt ggtctacgtg cggctgggac cgcacacacc cacctgagg 420
184 ctgaaccgct ttctccgcgc gcccgcctc ttgaggcct tcgaccgcac agagaccgcg 480
185 acagcttacc caaatgcctt tcgcattgcc aagctgatgc ttacatttt tgcgtcatt 540
186 cattggaaca gctgcctata ctttgcccta tcccggtacc tgggcttcgg gcgtgacgca 600
187 tgggtgtacc cggacccgcg gcagcctggc tttagagcgc tgcggcgcca gtacctctat 660
188 agcttttact tctccacgct gatactgact acagtgggag atacaccgac gccagccagg 720
189 gaagaagagt acctcttcat ggtgggcgac ttctgctggt ccgtcatggg ttccgccacc 780
190 atcatgggta gcatgagctc tgcattctac aacatgaaca ctgcagatgc ggctttctac 840
191 ccagatcatg cactggtgaa gaagtacatg aagctgcagc acgtcaaccg caagctggag 900
192 cggcgaggtt ttgactggta tcagcacctg cagatcaaca agaagatgac caacgaggta 960
193 gccatcttac agcaattgcc tgagcggtg cgggcagaag tggctgtgtc tgtgcacctg 1020
194 tccactctga gccgggtgca gatctttcag aactgtgagg ccagcctgct ggaggagctg 1080
195 gtgctgaagc tgcagcccca gacctactca ccaggatgat atgtatgccg caaaggagac 1140
196 attggccaag agatgtacat catccgagag ggtcaactgg ccgtggtggc agatgatggt 1200
197 atcacacagt atgctgtgct cgggtgcagg ctctactttg gggagatcag catcatcaac 1260
198 atcaaaggga acatgtctgg gaaccgcgcg acagccaaca tcaagagcct aggttattca 1320
199 gacctattct gcctgagcaa ggaggacct cgggaggtgc tgagcgagta tccacaagca 1380
200 cagaccatca tggaggagaa aggacgtgag atcctgctga aaatgaacaa gttggacgtg 1440
201 aatgctgagg cagctgagat cgcctgcag gaggccacag agtcccggt acgaggccta 1500
202 gaccagcagc tggatgatct acagaccaag ttgctcgcc tcctggctga gctggagtcc 1560
203 agcgcaacta agattgctta ccgcattgaa cggctggagt ggcagactcg agagtggcca 1620
204 atgcccagag acctggctga ggctgatgac gagggtgagc ctgaggaggg aacttccaaa 1680
205 gatgaagagg gcagggccag ccaggaggga ccccaggctc cagagtga 1728
208 <210> SEQ ID NO: 4
209 <211> LENGTH: 26
210 <212> TYPE: DNA
211 <213> ORGANISM: Artificial Sequence
213 <220> FEATURE:
214 <223> OTHER INFORMATION: Description of Artificial Sequence:sense strand

```

RAW SEQUENCE LISTING

DATE: 01/26/2002

PATENT APPLICATION: US/09/927,267

TIME: 13:50:17

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

```

215      amplification primer Oligo 1
217 <400> SEQUENCE: 4
218 gcagatcttt cagaactgtg aggcca                26
221 <210> SEQ ID NO: 5
222 <211> LENGTH: 26
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Description of Artificial Sequence:antisense
228      strand amplification primer Oligo 2
230 <400> SEQUENCE: 5
231 cctgccctct tcatctttgg aagttc                26
234 <210> SEQ ID NO: 6
235 <211> LENGTH: 26
236 <212> TYPE: DNA
237 <213> ORGANISM: Artificial Sequence
239 <220> FEATURE:
240 <223> OTHER INFORMATION: Description of Artificial Sequence:sense strand
241      first round 3' RACE gene-specific amplification
242      primer Oligo 3
244 <400> SEQUENCE: 6
245 gccaacatca agagcctagg ttattc                26
248 <210> SEQ ID NO: 7
249 <211> LENGTH: 27
250 <212> TYPE: DNA
251 <213> ORGANISM: Artificial Sequence
253 <220> FEATURE:
254 <223> OTHER INFORMATION: Description of Artificial Sequence:sense strand
255      nested gene specific amplification primer Oligo 4
257 <400> SEQUENCE: 7
258 ggatgatcta cagaccaagt ttgctcg                27
261 <210> SEQ ID NO: 8
262 <211> LENGTH: 26
263 <212> TYPE: DNA
264 <213> ORGANISM: Artificial Sequence
266 <220> FEATURE:
267 <223> OTHER INFORMATION: Description of Artificial Sequence:sense strand
268      primer
270 <400> SEQUENCE: 8
271 atgagccagg acaccaaagt gaagac                26
274 <210> SEQ ID NO: 9
275 <211> LENGTH: 25
276 <212> TYPE: DNA
277 <213> ORGANISM: Artificial Sequence
279 <220> FEATURE:
280 <223> OTHER INFORMATION: Description of Artificial Sequence:antisense
281      strand primer Oligo 6 specific to human CNG2B
283 <400> SEQUENCE: 9
284 gttgatgatg ctgatctccc caaag                25

```

Use of n and/or Xaa has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/927,267

DATE: 01/26/2002

TIME: 13:50:18

Input Set : A:\-65-1.app

Output Set: N:\CRF3\01262002\I927267.raw

L:370 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15